

XLIV. *Memoir on the Genus Cermatia and some other exotic Annulosa (in a Letter addressed to the Secretary).*  
By R. TEMPLETON, Esq., R.A.

[Read 3 October, 1842.]

(Plates XVI. and XVII.)

Colombo (Ceylon),  
May 19th, 1842.

MY DEAR WESTWOOD,

I SEND to you, "per Tigris," a present for the Entomological Society, which I hope will prove an acceptable one, though you may be at first rather surprised to find that it is not a present of insects. This it is.—In this country, along the marshy banks of the large rivers, grows a large handsome tree, named *Sonneratia acida* by the younger Linnæus; its roots spread far and wide through the soft moist earth, and at various distances along send up most extraordinary long spindle-shaped excrescences four or five feet above the surface. Of these Sir James Edward Smith remarks:—"What those horn-shaped excrescences are, which occupy the soil at some distance from the base of the tree, from a span to a foot in length, and of a corky substance, as described by Rumphius, we can offer no conjecture." Most curious things they are, they all spring very narrow from the root, expand as they rise, and then become gradually attenuated, occasionally forking but never throwing out shoots or leaves, or in any respect resembling the parent root or wood. They are firm and close in their texture, nearly devoid of fibrous structure, and take a moderate polish when cut with a sharp instrument; but for lining insect boxes and making setting boards, they have no equal in the world, the finest pin passes in with delightful ease and smoothness, and is held firmly and tightly, so that there is no risk of the insects becoming disengaged: with a fine saw I form them into little boards and then smooth them with a sharp case-knife, but the London veneering mills would turn them out fit for immediate use, without any necessity for more than a little touch of fine glass paper. Some of my pigmy boards are two feet long by three and a half inches wide, which is more than sufficient for our purpose, and to me they have proved a vast acquisition. The natives call them "Kirilimow," the latter word signifying "root." The above may interest some of your botanical friends.

My professional engagements have prevented my doing more than making myself acquainted with the habitats of insects I

intend to capture, and, besides, I am never away from Colombo where insects are by no means plentiful, so that I have as yet had little opportunity of making a collection. Of my old pets, the spiders, I bottle up all I see, to be reserved for future examination.

On turning over Guérin's "Iconographie" some time ago, I was much surprised at his drawing of *Machylis polypoda*; it resembles mine in no respect, though I see that M. Milne Edwards, in the new edition of Lamarck, unhesitatingly declares both indentical with *Lepisma polypoda* of Linnè. It shows how necessary sketches are to accompany the descriptions of insects of obscure tribes, and I have no doubt the sketches in question are taken from essentially distinct animals. To be satisfied that they are really distinct, compare the front views of the heads: in mine the labrum (chaperon) is broadly developed, in his elongate; in mine the maxillary palpi and (in some measure) the labial are robust, in his slender; similar differences in the antennæ, and, if you might judge from the basal portion of this latter, (figured 1*a*, Guérin,) such an extraordinary difference is exhibited that one would hardly imagine they belonged to the same genus; and still more striking differences are discovered in the articulations of the caudal setæ. That neither one or other is *Lepisma polypoda* of Linnè, I have no longer any doubt; the habitat of this latter everywhere given is "*littoribus lapidosis*," a locale I never met one in; all that I have seen have been in dry stone fences, especially when the interstices are overgrown with moss. Fabricius, in his "Species Insectorum," quotes the Linnæan habitat, and moreover adds "*aliam simillimam inveni cauda quintuplia*," which nearly satisfies me that both are alluding to Leach's *Petrobius maritimus*, to which the latter observation correctly enough applies, since if a dozen of them be caught such differences occur in the length and appearances of the setæ, that on a cursory examination you may hold them as having five setæ and be puzzled as to their relative lengths.

To settle all these difficulties, it only remains for you to request your Swedish correspondents to examine the *Lepismidæ* of their stony shores, assume that Linnè drew his description from those found in the habitat he gives, and that they are the true *Lepismæ polypodæ*, and if they in no ways differ from Leach's insect sink his name and retain *Machilis polypoda* for Guérin's, which must clearly be Latreille's, and call mine *Machilis dispar*. I met with specimens in dry stone fences at Mr. Thompson's seat, three miles from Belfast, which I have a faint recollection of thinking different from that I figured: I wish you would procure some and

examine them. I wish I could persuade you to give us a monograph of the whole tribe, describing all you can get hold of in Britain or from your continental friends, and restoring the proper generic names. As a retaining fee I send you one to be included among the true *Lepismæ*.

*Lepisma niveo-fasciata*. (Pl. XVI. fig. 1—7.)

Intensely black, with a broad white band along the posterior margin of the first dorsal plate. Head with several diverging bunches of yellow setæ anteriorly and laterally. The margins of the thorax similarly distinguished. A row of dots near the posterior dorsal margin of each abdominal ring, having four or five similar setæ, two invariably projecting backwards, the rest outwards. Body beneath silvery, the abdominal rings on each side with two rows of diverging bundles of yellow setæ. Legs, antennæ, and maxillary palpi yellow, caudal appendages fuscous.

The caudal appendages, (fig. 2,) compared with the length of the body, are of variable length, composed of short thick rings, each with numerous rather long stiff hairs directed directly outwards, and the apical margin crowned with minute hairs projecting backwards, every third or fourth with long, strong, stiff spines standing at right angles.

The antennæ, setaceous, arise with two naked joints, the first short, the second rather long; beyond the basal third the antennæ presents a singular character, it would seem that every four united to form one joint subdivided into three short and one long divisions, the latter armed with bristles (fig. 3a, 3b, 3c): the same character would seem to pertain to those nearer the head, but the divisions are so short and hairy that I could not satisfy myself that it was so.

The young differ so much from the mature insect that I took them at first for a different species: they are fuscous or atrous; antennæ, legs, and appendages very pale, the thoracic plates are proportionally less broad, and the first is devoid of the white marginal band.

When the little creature is moving rapidly the double pair of auxiliary legs are dragged along merely supporting the hind part of the abdomen, but when it moves very slowly I have occasionally noticed an ambulatory movement, but nothing resembling that of true legs; in fact, the terminal joint being clothed with an irregular brush of minute hairs would seem to render it impossible that the animal could derive any advantage from it as such.

The old Dutch books in the libraries are infested with these *Lepismæ*, and suffer much from their inroads.

The *Lepismacæ* should be separated most markedly from the other division of the *Thysanura* with which they are usually associated; the antennæ, caudal apparatus, and more especially the mouth, (and the habits of the animals,) having nothing in common. The very name that Lamarck has imposed on the order is founded in error. They are not *Arachnides antennées tracheales*, and of this you can easily satisfy yourself; detach the scales from the outside with a sable-brush, divide the insect into two halves by a sharp cut from the head to the tail, and under the microscope, by separating the fleshy interim from the tegument of the bronchi, brilliant silvery unconnected tubes are seen running upwards and forwards from near the posterior margin of each ring, throwing off numerous branches in all directions, *but without the slightest appearance of tracheæ*; the spiracles are excessively minute pores on the lateral parts of the belly, and only to be detected by throwing the light through the plates after the scales have been removed, and tracing down the bronchi to them.

As you have remarked, in your observations in the first volume of the Society's Transactions, Mr. MacLeay considered this tribe as the analogues of the *Orthoptera*, on account of their saltatorial powers; but I believe it has never been remarked how exceedingly closely they are associated with one division of this order, and of these most especially the *Achetidæ*. For instance, the *Orthoptera* are distinguished by their want of *tracheæ*; secondly, compare the caudal appendages, and we find much to strike us of close relationship: then the compound eyes and antennæ, these latter, in both the true *Lepismæ* and *Achetæ*, arising by two naked joints supporting long, setaceous, hairy, multiannular terminations; next the metamorphoses are similar; and, lastly, the trophi formed on precisely the same model. Turn to your sketches and description of *Acheta domestica*, at page 440 of your first volume,\* and compare them and it with the following description of the manducatory apparatus of *Lepisma* (fig. 4, head and prosternum):—

Labrum somewhat triangular, rounded at the angles.

Mandibles solid, with four strong, horny, transverse teeth (fig. 5a, 5b).

Tongue fleshy, filling up the space behind and between the mandibles.

Maxillæ bilobed, the outer galeated, partly protecting the inner lobe and carrying at its base the 5-jointed palpus. The inner shorter and surmounted by two strong incurved teeth (fig. 6).

\* Introd. to Mod. Class. of Insects.

Labium 4dri-lobed, the outer triangular, pilose, supporting the 3-jointed palpus, the inner somewhat square (fig. 7).

(Mentum leathery; it seems like a collar closing the aperture of the mouth posteriorly).

In short, it seems to me not unreasonable to imagine that on further investigation these will again be associated with the true insects, the only difficulty being the rudimentary organs thrown out to compensate the want of support afforded by the hind legs, or at least that they will be considered a completely distinct class from the *Myriapods* and be divided into two orders, *Thysanura* and *Podura*. All this however merits consideration and careful examination.

I see that Guérin has figured, under the name of *Podura succincta*, an addition to my subgenus *Orchesilla*. *P. nitida*, *nigromaculata*, *albo-cincta*, and *grisea*, Fab., must form a new subgenus,\* so must my *cingula* and *fuliginosa*; *stagnorum* and *arborea*, Lin., another; *aquatica*, Lin., *finctaria*, Lin., *ambulans*, Fab., with *dubius* and *muscorum*, another: and I wish the name I gave this last changed from *Achoreutes* to *Rathumoutes*.

I have now to direct your attention to some *Myriapods*. The genus *Cermatia* of Illiger has been to me always a puzzle, but I am at length satisfied of the existence of the following species:— At the Cape I became acquainted with a considerable number of a species of this genus, and I was struck with the constancy with which the relative proportions of the various parts of the body were maintained, and it gave me the clue to the unravelling of the doubts and difficulties I had previously to contend with; some minute characters derived from the dorsal plates likewise gave me assistance. The species I consider distinct are the following:—

I. Those with the body elongate and decidedly increased in breadth about the middle.

Sp. 1. *Cermatia araneoides*.

*Julus araneoides*, Pallas. Differs from all the others, as far as we can trust to his figure and excessively minute description, in the extreme narrowness of the body and in the equality of length of the antennæ and hind legs, both being nearly one half longer than the body.

Length 1.33 inch., relative proportions of body, antennæ, and hind feet, 1.0, 1.4, 1.4.

\* *Ptenura*, with long antennæ of four articulations, the third not longer than the fourth, which distinguishes them from *Pod. plumbea*.

Sp. 2. *Cermatia longicornis*. Hardwick, Lin. Tran. xiv. p. 131.

Resembles the last very much, but has the antennæ shorter and the last pair of legs longer.

Habitat Bengal.

Length 1.25 inch., relative lengths 1.0, 1.2, 1.8.

Sp. 3. *Cermatia nobilis*, mihi. (Pl. XVII. fig. 1—4.)

This giant of the tribe has the head small, sub-ovate, with a narrow black streak passing from the labrum along the edge of the fovea of the antennæ to the inner canthus of the eye; another more diffused from thence to the back of the head; a minute black line mesially imbedded in a brown patch, and with two angular black marks near its middle. Antennæ very long, slender, brown. Body elongate, spindle shaped, being considerably broader about the fourth scutellum, which is nearly square, dilated posteriorly, margin waved and furnished with numerous strong teeth or spines,—in this latter character the rest resemble it; all are pale brown, with a middle yellow line edged with brown, a dark longitudinal fascia on each side, and an obscure transverse one across the base. Legs long, successively lengthening, the last being very attenuated. Coxæ yellowish brown, with a blue annulus near the apex. Femora greenish, with two deep blue annuli. Tibiæ yellow, faintly annulated. Tarsi dark reddish brown.

Habitat Mauritius and India.

Fig. 1. The animal of the natural size.

2. The sixth scutellum and twelfth leg.

3. One of the tarsal annuli.

4. The second auxiliary leg and part of the first on the right behind it.

Length 2.0 inch., relative lengths 1.0, 1.6, 2.0.

Sp. 4. *Cermatia coleoptrata*.

*Scutigera coleoptrata*, Lam.

*Cermatia livida*, Leach.

*Cermatia* —, Savigny, Egypt, pl. 1, fig. 5.

This I found very common at Gibraltar. It differs from the two first in being much smaller; head more rotund, body more linear, last pair of legs longer, and, from the next species, in the scutella, the fourth being one quarter longer than broad, edges parallel and slightly waved, with longitudinal rows of minute spines, and the



margin with a double row of strong short spines of equal size; the antennæ likewise are shorter.

Habitat South of Europe.

Length 0.8 inch., relative lengths 1.0, 1.2, 2.0.

Pl. XVI. fig. 12. Fourth scutellum of *Cermatia coleoptrata*.

13. Margin of this scutellum exhibiting the spines.

Sp. 5. *Cermatia Capensis*. (Pl. XVI. fig. 8—11.)

Very common at the Cape of Good Hope, (my specimens were hung up in a bottle and all their hind legs became detached, so that I have merely sketched them, but I believe they are of the accurate dimensions). Head smaller in proportion than in the last species, pale yellow, the articulations marked with brown. Body pale yellowish, with a narrow yellow central fascia and a brown dash between it and the side; fourth scutellum sub-ovate, with a row of minute marginal teeth or spines, every fifth or sixth being longer and stronger than the others; the spines on the dorsum of the scutellum nearly obsolete. Legs robust and yellowish, without dark annuli, or extremely faint on the coxæ and femora.

Length 1.0 inch., relative lengths 1.0, 1.7, 1.4?

Pl. XVI. fig. 8. *Cermatia Capensis* a little magnified.

9. Last leg of the sixth scutellum.

10. Fourth scutellum.

11. Edge of the fourth scutellum exhibiting the spines.

Pl. XVII. fig. 5. Magnified portions of the articulations of the joints of the antennæ, and the tip.

II. Body short and of nearly equal breadth.

Sp. 6. *Cermatia longipes*.

*Scutigera longipes*, Lam.

*Scutigera araneoides*, Guérin, Iconographie, 1, fig. 7.

— *Savigny*, Egypt, pl. 1, fig. 6.

Clearly distinguished by the form of the body, shape of the head, shortness of the anterior legs, and the exceeding length of the posterior pair.

Length 1.2 inch., relative lengths 1.0, 1.7, 3.0.

Has not Guérin a joint too many at the base of the antennæ, Icon. 1, fig. 7 a?

Note—the relative lengths are successively those of the body, antennæ, and last legs.

I discovered at Trincomalee a most beautiful species of crab allied to *Nephrops*, but distinct in generic characters from it, which I have not yet had time to particularly examine, but you shall have it when I can get leisure to make the necessary sketches. In the mean time, adieu,

Your's, very truly,  
R. Templeton.

Colombo.

N.B. It may interest some of your conchological acquaintances to know that *Aricula radiata* of Leach is the far famed pearl oyster of Ceylon; I have got plenty of all ages destined for the Belfast Museum. I send you a sketch of the fry which roves about near the surface of the sea; it in scarcely any respect resembles the full grown shell. Vide Nat. Misc. vol. i. pl. 43.

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